Liver of crabfish,	471
Mussel, raw,	528
" boiled,	660
Ox-liver, raw,	570
Pork-ham, raw,	539
" boiled,	807
Salmon, raw,	776
" boiled,	610
Liver of pigeon,	742
Portable soup,	764
White of egg,	845
Crabfish, boiled,	859
Skate, raw,	859
Skate, boiled,	956
Herring, raw,	910
" boiled,	808
" milt of,	924
Haddock, raw,	920
" boiled,	816
Flounder, raw,	898
" boiled,	954
Pigeon, raw,	756
" boiled,	827
Lamb, raw,	833
Mutton, raw,	773
" boiled,	852
Veal, raw,	873
Veal, boiled,	911
Beef, raw,	880
" boiled,	942
Ox-lung,	931

Purified muscular fibre from various animals.

Fibre of eel,	908
" salmon,	982
" herring,	914
" haddock,	988
" flounder,	988
" pigeno,	775
" lamb,	916
" sheep,	928
" calf,	993
" ox,	935
" sow,	893

Proximate principles of animals calculated from the quantity of nitrogen as determined by Mulder.

Pure proteine,	1006
" albumen,	996
" fibrine,	999
" caseine,	1003
" gelatine,	1128
" chondrine,	910

13. *On the Properties of the Leaves of the Oxalis Crussicaulis, and their use as an Astringent, especially in Hemorrhages and Chronic Catarrh.* By Dr. MONTAIN.—This species of oxalis is a native of Peru. Its roots are numerous, and constitute, as do also the leaves, a very agreeable and nourishing article of food. The leaves likewise furnish an astringent juice, which is very acid, but agreeable, and which keeps for a long time without spoiling.

A little before frost, the stems are collected, submitted to strong pressure, and a large quantity of juice is obtained. By macerating the residuum in a certain quantity of water, we obtain a liquid slightly astringent. This juice unites easily with the sugar to form a syrup, of an acid and slightly aromatic flavour. When mixed with water it furnishes an agreeable drink.

M. Montain administers the juice either pure or sweetened, and in different proportions. The dose internally—is three to six tablespoonfuls a day. It is sometimes administered in the form of injection. It is employed in this last way, and with success in cases of vesicular polypus of the nasal fossæ.

Chronic metrorrhagia, and most other hemorrhages of the same nature, not connected with any organic affection, seem to be much benefited by its use after fifteen days treatment. Chronic catarrh, diarrhœa and dysentery, are successfully combated by the juice of the oxalis, either pure, weakened with water, or in the form of syrup. It is also efficacious in cases of blennorrhagia, especially those which resist the effects of copaiva and cubebs.

This astringent M. M. considers worthy of attention, as succeeding in some cases where other articles of the same class have failed.—*Journal des Connaissances Medico-Chirurgicales*, Nov. 1845, from *Journ. de Méd. de Lyon*, July, 1845.

14. *On Amorphous Quinine as it exists in the substance known in commerce as quinoidine.*—[The *Lancet* of May 28th contains a very important paper on this subject, by Baron LIEBIG, which we transfer to our pages entire.]

In the preparation of sulphate of quinine, after all the crystals which can be obtained are separated, a dark-coloured mother-liquor remains, having an extremely bitter taste. On the addition of an alkaline carbonate, this liquid loses its colour and bitter taste, depositing, at the same time, a yellowish-white, or brown-

ish precipitate, which, after being rinsed with water, and exposed to a gentle heat, agglutinates into a coherent mass, exhibiting the appearance of resin.

From the experiments of Sertuerner, Thiele, Bucholz, Junior, Koch, and other chemists, it has been long known that this resinous substance possesses the properties of a base, that it neutralizes acids perfectly; but the salts which are formed by these combinations with acids, have baffled all attempts at crystalization.

Sertuerner, who was the first chemist to separate this resinous substance from the mother-liquor of sulphate of quinine, considered it to be a distinct and peculiar organic base, existing in yellow and red cinchona barks, associated with quinine and cinchonine. He assigned to this, as he supposed, new substance, the name quinoidine, and greatly extolled its medicinal efficacy, in which he declared it was in all respects equal to quinine. In his journal, (*Uber die neuester Furtschritte in der Chemie, Physik und Heilkunde*, bd. iii., No. 2, page 269,) he terms it "a true fever-destroyer."

Subsequently, this substance, under the term quinoidine, has been employed medicinally in many places, and even introduced into the lists of commercial articles or price currents of many of the druggists of Germany.

In certain mother-liquors of quinine left in the preparation of the sulphate, which were analyzed by Henry and Delondre, and also a sample of quinoidine examined by Geiger, these able chemists discovered an amount of quinine and cinchonine, accompanied by a resinous substance which they considered impeded the crystalization of the sulphates of the two bases, and which in their experiments they failed to separate. The results obtained by these chemists, and the inferences obviously deducible from these results, rendered it indubitable that the medicinal efficacy of quinoidine must vary according to the greater or less proportion of quinine it may happen to contain. Now, there cannot be a doubt but that this uncertainty with respect to the relative amount of quinine in commercial quinoidine, has prevented many physicians from prescribing the latter as a remedy, notwithstanding the testimony borne to its efficacy.

Having occasion, some time since, to pass through Coblentz, I procured from Messrs. Jobst & Co., of that town, a sample of quinoidine, for the purpose of employing it for the preparation of quinoleine—a substance discovered by Gerhardt to result from the transformation of quinine, and to which much scientific interest attaches, in consequence of the recent discovery of Professor A. W. Hoffman, that quinoleine is identical with leucol, a body which is one of the components of the essential oil of tar, prepared from anthracite coal. It then occurred to me, that if the sample of quinoidine which I had procured contained quinine, it must yield a corresponding amount of quinoleine, and that, consequently, a very simple method of testing quinoidine for the amount of quinine it may contain might be based upon this property of quinine to be transformed into quinoleine.

On subjecting the sample I had obtained (which amounted to several ounces) to distillation with strong potass ley, I confess I was surprised at the large amount of quinoleine produced, which proved the presence of a far larger proportion of quinine than could have been anticipated. This unexpected result induced me to subject quinoidine to a stricter examination; and in order to avoid being misled by accidental circumstances, I procured, beside the Coblentz sample, specimens from Messrs. Hess, Leissler, and Fiedler, of Mayence, and from Messrs. Mettenheimer and Simon, at Frankfort, and also from a druggist at Hamburgh.

These various samples of quinoidine I received partly in irregularly-shaped masses, and partly as square cakes of a darker or lighter brown colour, which, by the warmth of the hand, became soft and flexible, but were readily pulverizable in the cold. The operation of powdering it imparted to it an extraordinary degree of elasticity. All these samples were completely insoluble in cold water, but scantily soluble in hot water, imparting to the latter a strongly bitter taste. I may here, however, observe, in passing, that some commercial specimens which I have since seen are soluble in cold water, arising from a considerable admixture of other substances; differing, also, from the same cause, in many of the following properties:—

All the first samples I speak of dissolved in alcohol, in the proportion of one part to two of the menstruum; and from this alcoholic solution, water precipitates copious, yellowish-white, resinous flakes, which cohere into a mass like the

original quinoidine. Dilute mineral acids, as well as most of the organic acids, dissolved my samples entirely, and by adding a sufficient amount of the substance, became completely neutralized. From these solutions in acids, ammonia and alkaline carbonates precipitated resinous flakes. On agitating the fluid containing these flakes and the flocculent precipitate with an equal volume of ether, the precipitate dissolves in the ether, *with the exception of a dark-brown residue.* On evaporating the ether, a resinous mass is obtained, having all the properties of an organic alkaloid.

Its salts are precipitated by tannic acid. Chloride of platinum produces in its solution in hydrochloric acid a yellow precipitate. Moreover, it dissolves completely in a solution of sulphate of copper with the separation of oxide of copper. Now there exists no resin, nor, indeed, any other substance similar to resin, which possesses this peculiar property.

These observations can leave no doubt whatever as to the chemical character of a considerable proportion of the residue to which the term quinoidine has been applied—namely, that it is a true organic base.

On subjecting the purified substance to elementary analysis, the following were the results:—

1st.—From the quinoidine of Mayence, 0.490 grammes yielded 1.3204 grammes of carbonic acid, and 0.3395 grammes of water.

2d.—From the quinoidine of Frankfort, 0.618 grammes yielded 1.6575 grammes of carbonic acid, and 0.4250 grammes of water.

3d.—From the quinoidine of Coblentz, 0.3475 grammes yielded 0.9475 grammes of carbonic acid, and 0.2375 grammes of water.

According to these analyses, this substance contains

	i.	ii.	iii.
Carbon . . .	73.49 ...	73.14 ...	74.33*
Hydrogen . .	7.69 ...	7.64 ...	7.57

The determination of the nitrogen, by the method of Verrentrapp and Will, yielded the following results:—

0.515 afforded 0.289 of platinum.
0.617 " 0.401 "

And, consequently, the substance under examination contains, according to the first analysis, 8.04 of nitrogen: according to the second, 9.54 of nitrogen—the medium of the two analysis giving us as its amount of nitrogen, 8.79.

Analysis of the Chloride of Platinum and the Base from Quinoidine, (Amorphous Quinine.)

I.—0.6663 grammes of the double salt yielded 0.1755 of platinum; 0.8700 grammes of the double salt yielded 1.349 carbonic acid, and 0.303 of water.

II.—0.881 grammes of double salt yielded 0.224 of platinum.

III.—1.0668 grammes of double salt yielded 0.2715 of platinum.

From these analyses, therefore, the following are the proportions of carbon, hydrogen, and platinum, which exist in 100 parts of the chloride of platinum, and the substance derived from quinoidine:—

	i.	ii.	iii.
Carbon . . .	32.44		
Hydrogen . .	3.86		
Platinum . .	26.33 ...	26.32 ...	26.45

Now, if we compare the proportion of carbon, hydrogen, and platinum, existing in the chloride of platinum and this base, derived from quinoidine, with the amount of the same elements present in the corresponding chloride of platinum and quinine; and, further, the amount of carbon, hydrogen, and nitrogen contained in the substance under examination, with the proportion of the same elements as they exist in quinine; we perceive at once that the two substances have identically the same composition.

* Carbon = 75, according to Prout and Dumas.

Quinine, according to the formula,

$$C_{20}H_{12}NO_2$$

contains—

Carbon, 74.33; hydrogen, 7.75; nitrogen, 8.62.

Chloride of platinum and quinine, according to the formula,

$$Cl\,H\,C_{20}H_{12}NO_2+Cl\,Pt$$

contains—

Carbon, 32.38; hydrogen, 3.53; platinum, 26.83.

The inference from these experiments, then, is irresistible; the uncrystaline substance derived from quinoidine bears exactly the same relation to ordinary quinine that uncrystaline sugar (barley-sugar) bears to crystaline (sugar-candy). Both yield the same products of decomposition; both have the same atomic weight, and identically the same composition; they differ only in form: in one word, the one is crystaline, the other, *amorphous*.

I deem this to be an important discovery, when we consider the high price of quinine, the possibility of a check to the supply of cinchona bark from the countries producing it, and the amount of the crude quinoidine which has accumulated since the manufacture of sulphate of quinine was commenced. Quinine, indeed, seems to be absolutely indispensable for the treatment of diseases; the progress of civilization in modern times has depended, far more than has been conceived, upon the discovery of a remedy for the fevers which prevail where tillage is imperfect, and in new and unbroken soils.

This chemical investigation has thrown an interesting light upon the testimonies borne to the efficacy of quinoidine in the treatment of fever, and the highest encomiums have been passed upon it; but the commercial specimens have differed very much in value; while some have consisted nearly altogether of amorphous quinine, others have contained only a small per centage.

It is necessary that the amorphous quinine should be separated from all admixtures and impurities, and prescribed in its pure state. There can be no doubt but the same substance will produce the same effect on the animal organism, whether exhibited in a crystaline or an amorphous state. The system, as we may say, makes no difference in such a case. As I have already observed, the mystery about quinoidine is completely solved by the discovery, that it usually contains a very large per centage of pure quinine in an amorphous state.

In a commercial point of view, it is certainly a matter of great importance that we should be able to judge by the mere external appearance of a remedy, of its purity; and consequently, how far we may rely upon its efficacy. This is thought to be the case with the crystaline sulphate of quinine, whilst the non-crystaline form of quinoidine has probably led to a disregard of the evidence for its usefulness, even more than the fact of its being, as usually sold, an admixture of various substances. But with respect to the mere amorphous form, when the quinine is separated from all its adhering impurities, it is in the same case with opium, castor, and many more of the most efficient remedies which we possess, particularly with the extracts of our pharmacopœias. It is necessary to be assured of their purity before we employ them, but their amorphous form does not prevent their use. In many of these cases, indeed, having no direct or ready way of testing them, we rely solely upon the honourable character of the merchant and dealer; but we have a completely satisfactory test for the purity of amorphous quinine. Few medicinal agents afford so ready a means of distinguishing them, and detecting admixtures, as the organic alkaloids; but if these tests are not employed, it is as easy to be deceived in purchasing crystaline sulphate of quinine, as the amorphous.

Amorphous quinine is completely soluble in dilute sulphuric acid, and in alcohol, as I have said above; it is also completely soluble in a solution of sulphate of copper, with separation of oxide of copper. And if its solution in a dilute acid yields, upon precipitation by means of ammonia, exactly the same amount of precipitate as the weight of the substance originally dissolved in the acid, there can be no doubt remaining as to the perfect purity of the sample under examination.

It only remains for me to observe, that no dependence should be placed upon

the ordinary quinoidine of commerce. As I have already stated, some samples which I have seen, dissolve incompletely in water, forming a dark-brown muddy fluid; these have been probably produced by simply evaporating the mother-liquors of sulphate of quinine to dryness. They are, therefore, uncertain mixtures of various substances with sulphate of amorphous quinine, with or without excess of acid, so that in purchasing such specimens, the buyer is paying the price of an organic alkaloid for sulphuric acid, &c. The pure amorphous quinine should be separated, and it would then form a most valuable remedial agent; but the prescriber must be assured of its purity, and the test I have given will suffice for this purpose.

15. *Accumulation of Medicines in the System.*—M. MIALHE, in his *Traité de l'Art de Formuler*, makes some interesting remarks on this subject. "When," he observes, "an insoluble medicinal compound is introduced into the system, and cannot be entirely dissolved by the gastric and intestinal fluids, the insoluble portion of this body, or the insoluble whole, either traverses the entire length of the alimentary tube, to be expelled with the feces, or is arrested in its course, and lodges for a time in some of the folds of the intestinal mucous membrane. Thus the inconsiderate employment of caustic magnesia has given rise in the stomach of the gouty to extraordinary magnesian incrustation; insoluble preparations of iron, and especially the subcarbonate of the peroxyde, administered in two large doses, often occasion intestinal concretions. The accumulations may even occasionally be the direct consequence of the exhibition of too great a quantity of the medicine. But the insoluble matters thus accumulated do not all present the same dangers; those on which the vital fluids exert no effect, act on the surfaces with which they are in contact only as foreign bodies,—that is, by causing irritation and symptoms of inflammation, while matters capable of becoming soluble in consequence of a change in the quantity, or in the composition of the visceral humours, may thus become active, or often poisonous, and by their absorption give rise to severe or even fatal effects.

"It is thus that calomel, given as a purgative in large doses, occasionally causes ptyalism, and deeply affects the system: so also basic or officinal sulphate of quinine, administered in the dose of several grammes daily, though at first producing no remarkable physiological effect, has all at once given rise to symptoms of poisoning, followed by death. A few glasses of tartaric lemonade have occasioned vomiting and diarrhœa in a patient who had taken protoxide of antimony some days before, it is scarcely necessary to add from the formation of tartarized antimony. Iodureted water, given to a patient affected with a cutaneous disease, who had a short time before been taking calomel as an alterative, has given rise to most profuse salivation, occasioned by the biniodide of mercury, resulting from the action of the iodureted water on protochloride of mercury still remaining in the system."

MEDICAL PATHOLOGY AND THERAPEUTICS.

16. *On the Treatment of Urinary Diseases.* By JOHN ALDRIDGE, M. D.—It has long appeared to me a grievous error in the treatment of urinary diseases, the habit of regarding the alterations of the renal secretion in a purely chemical light. Exhibiting acids, if the urine be alkaline, and alkalies if this liquid be acid; and modifying the food, so as to diminish the chances of sugar getting into the system in cases of diabetes mellitus. These simple and most erroneous principles satisfy and guide the majority of practitioners in their treatment of urinary diseases. This error is not peculiar to the therapeutics of renal lesions: we every day see alkalies exhibited in pyrosis, not with the idea of curing the lesion of innervation, which constitutes the disease, but with the hope of neutralizing the acid secretion which is the effect. Yet, how much opposed to rational pathology is the theory upon which treatment of this kind is founded? and how ineffectual is it, usually, in the relief of those diseases to which it has been applied? You will see patients suffering from gastralgia and pyrosis, taking alkalies in large quantities for weeks